

Figure 1.1

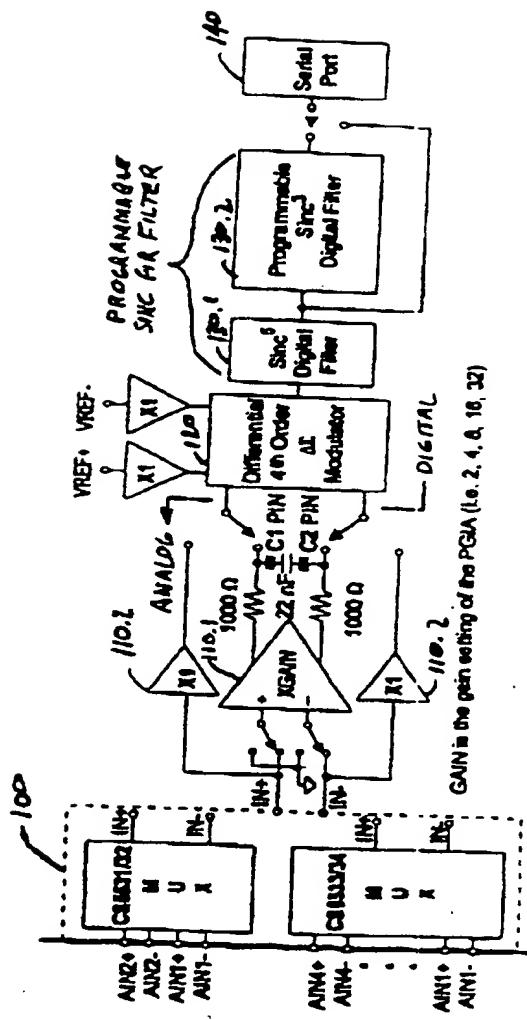


FIGURE 1.2

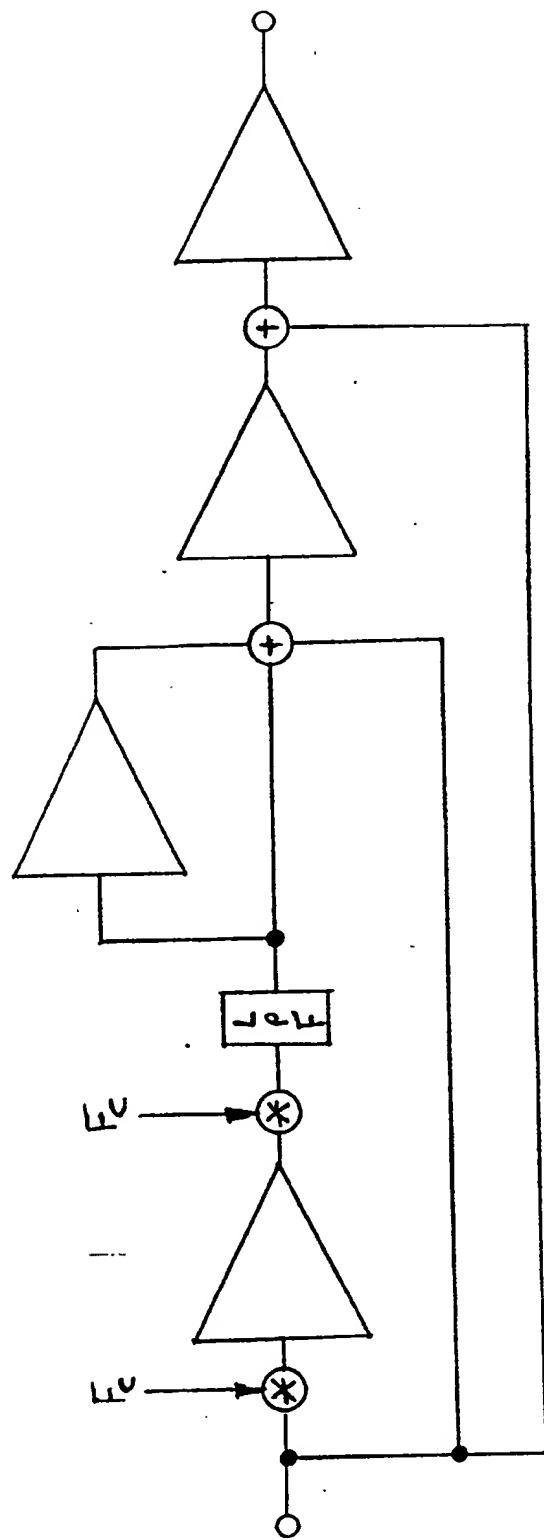
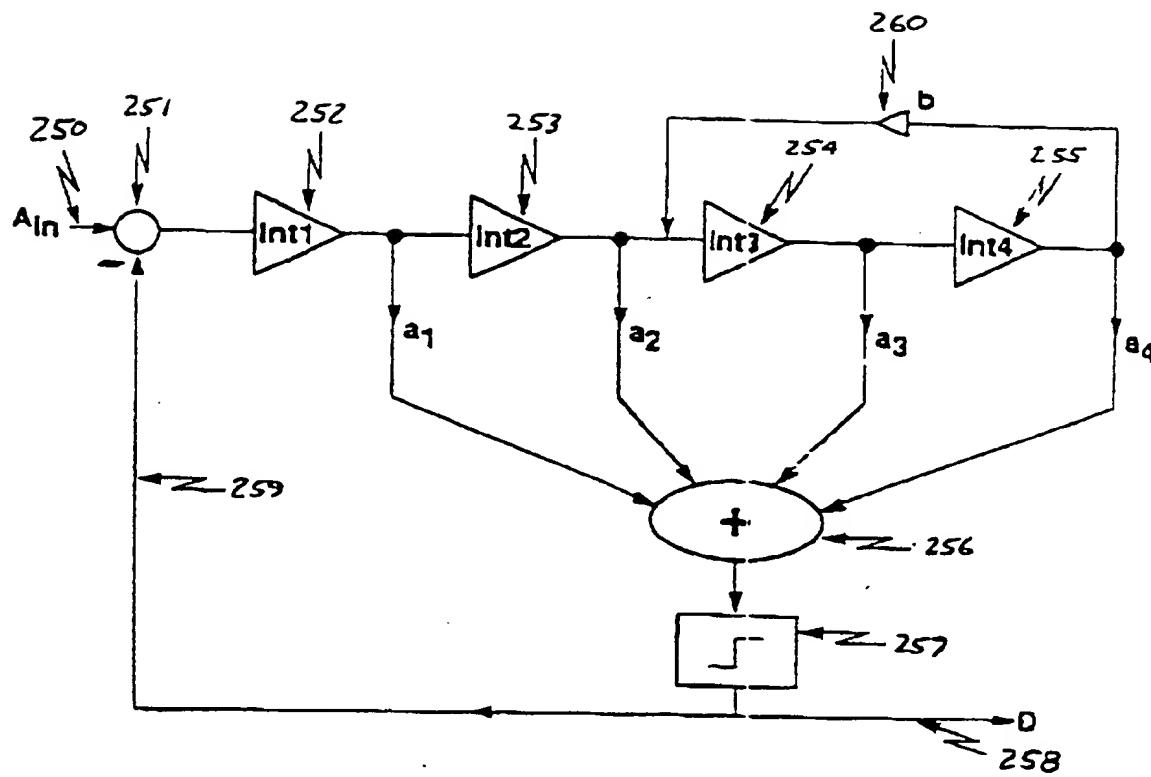


FIGURE 1.3



**Figure 1.4**

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## DIGITAL BLOCK DIAGRAM

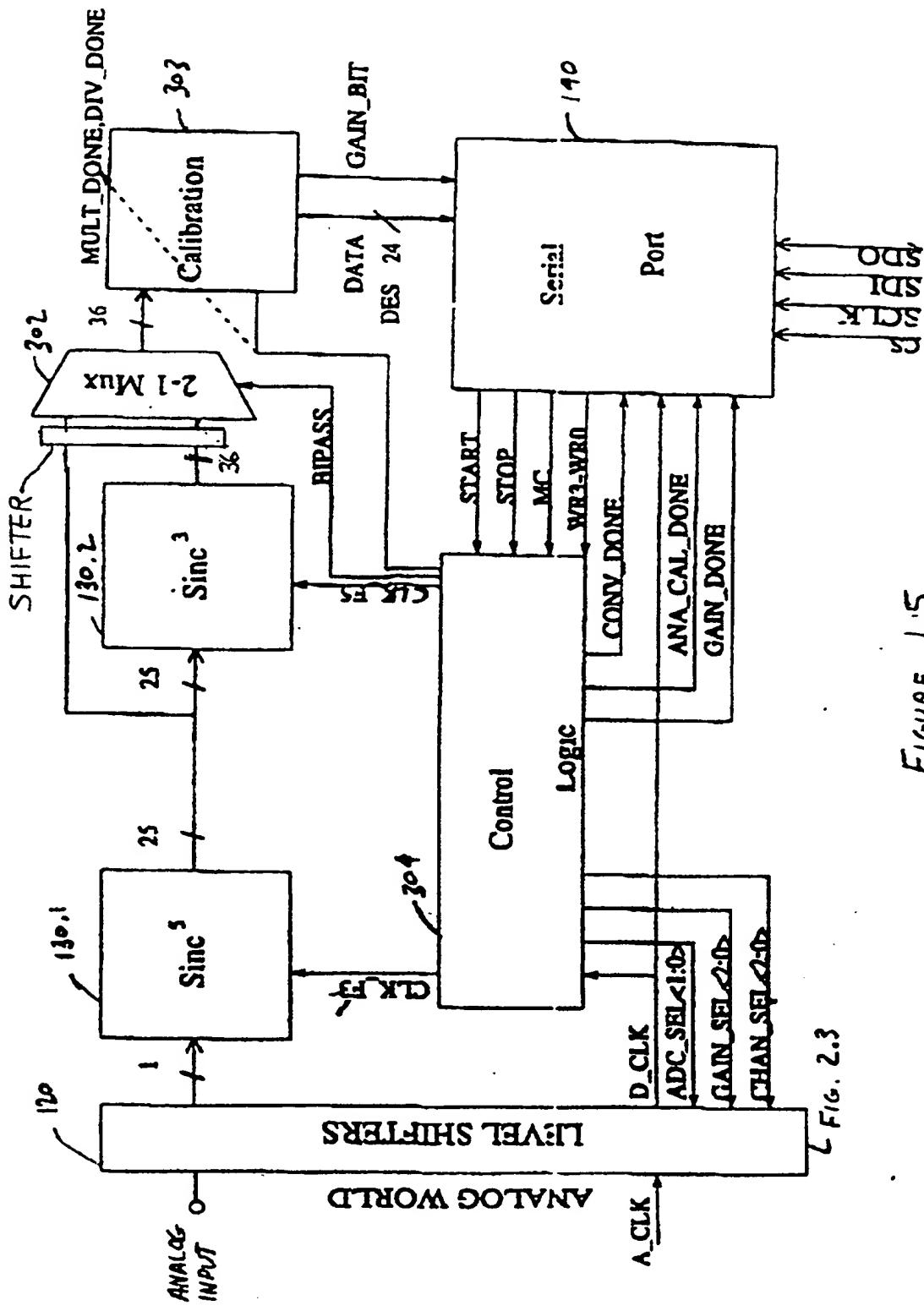
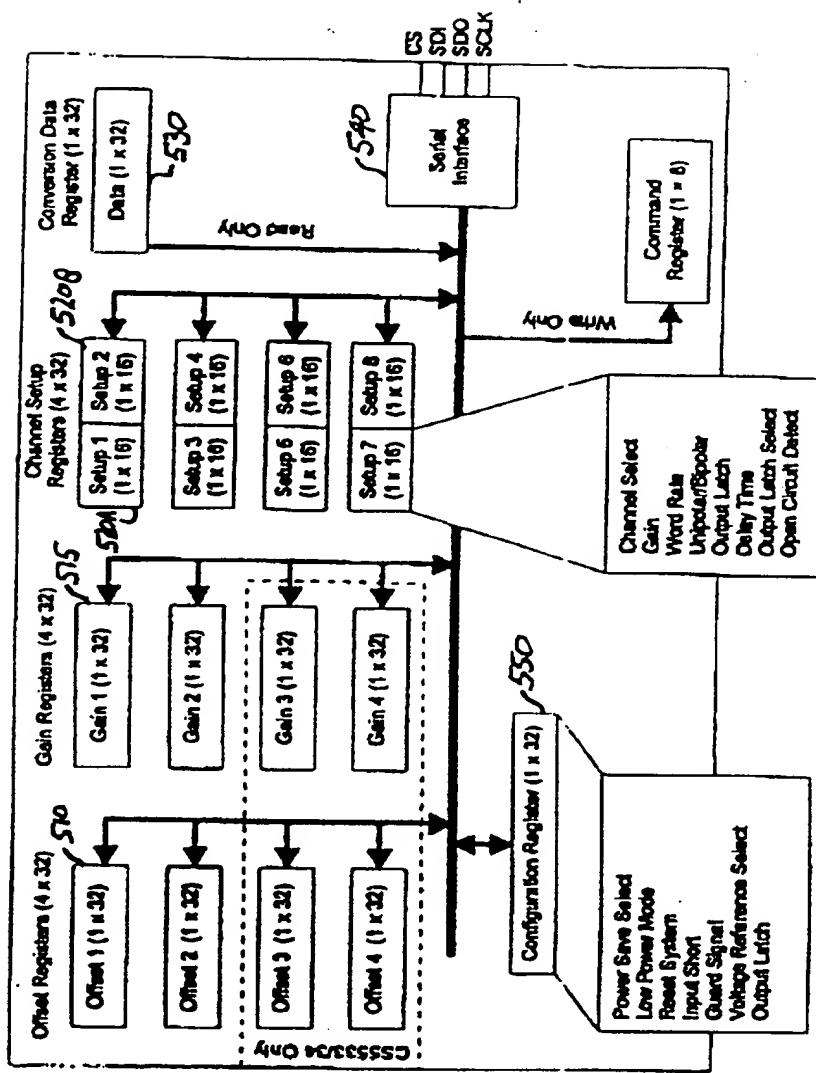


FIGURE 1.5

FIG. 2.3

FIGURE 1.6



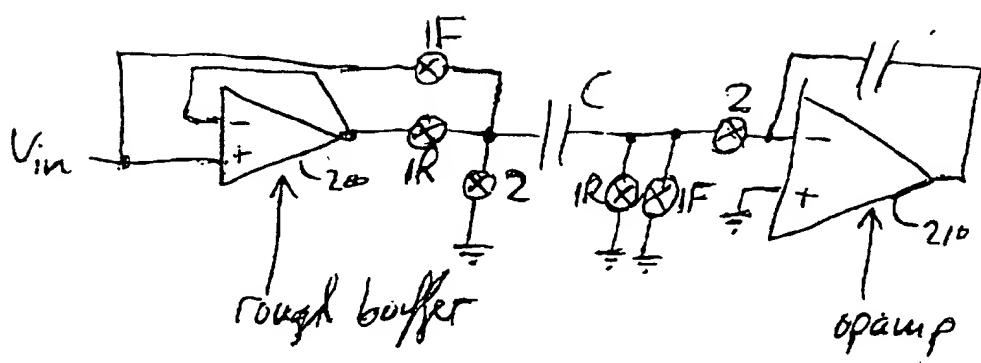


FIGURE 2.0

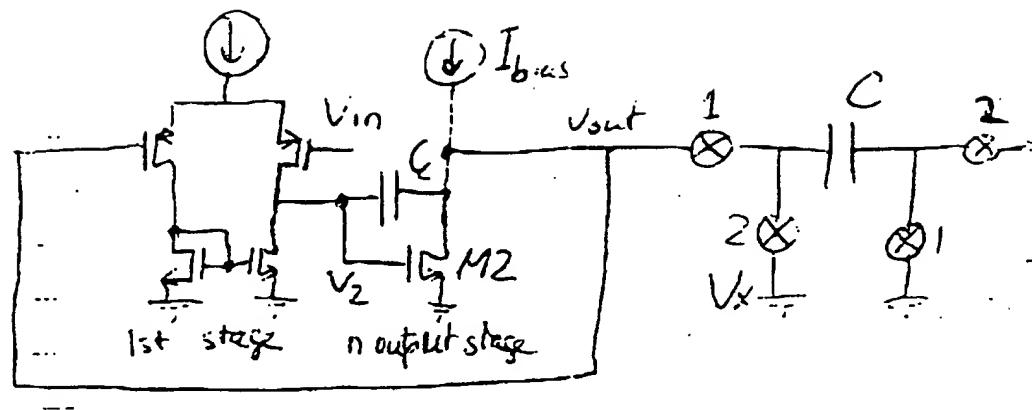


FIGURE 2.1

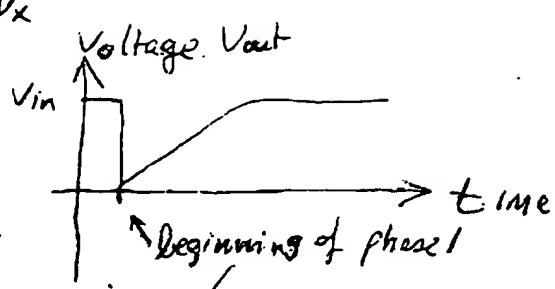
$V_{IN} = \text{CONSTANT}$  $V_{OUT} > V_x$ 

FIGURE 2.2

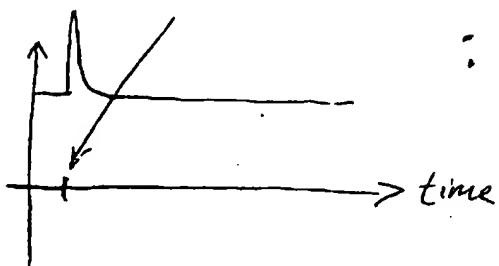
 $V_{IN} = \text{CONSTANT}$  $V_{out} < V_x$ 

FIGURE 2.3

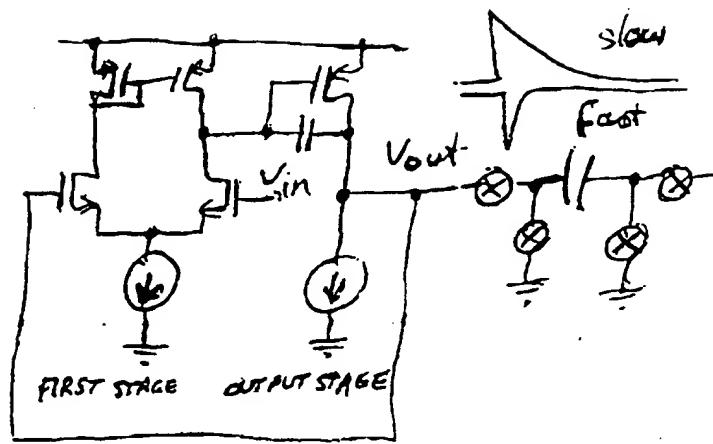


FIGURE 2.4

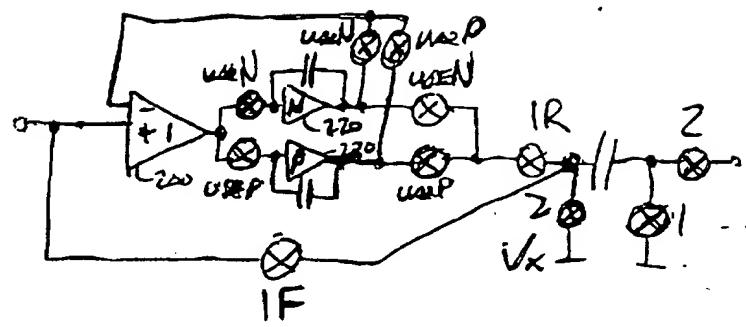
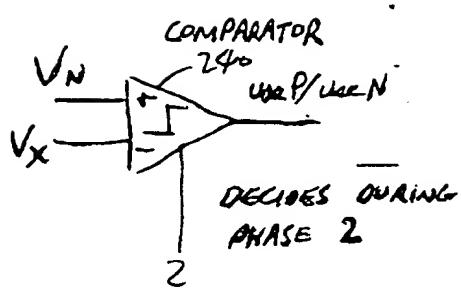


FIGURE 2.5

FIGURE 2.6

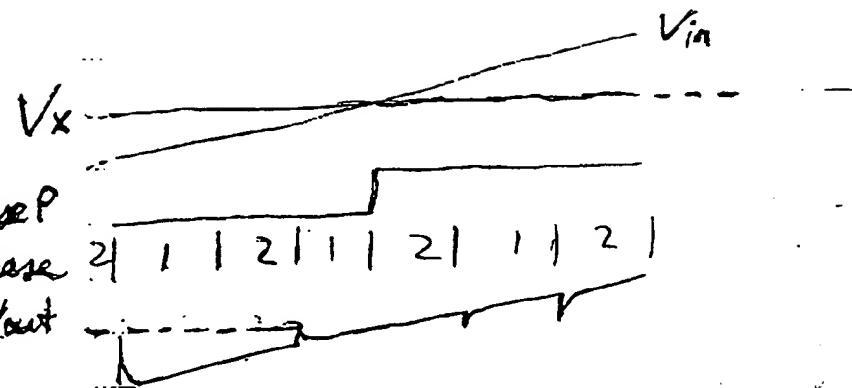


FIGURE 2.7

FIGURE 2.8

## MULTIPLIER ARCHITECTURE

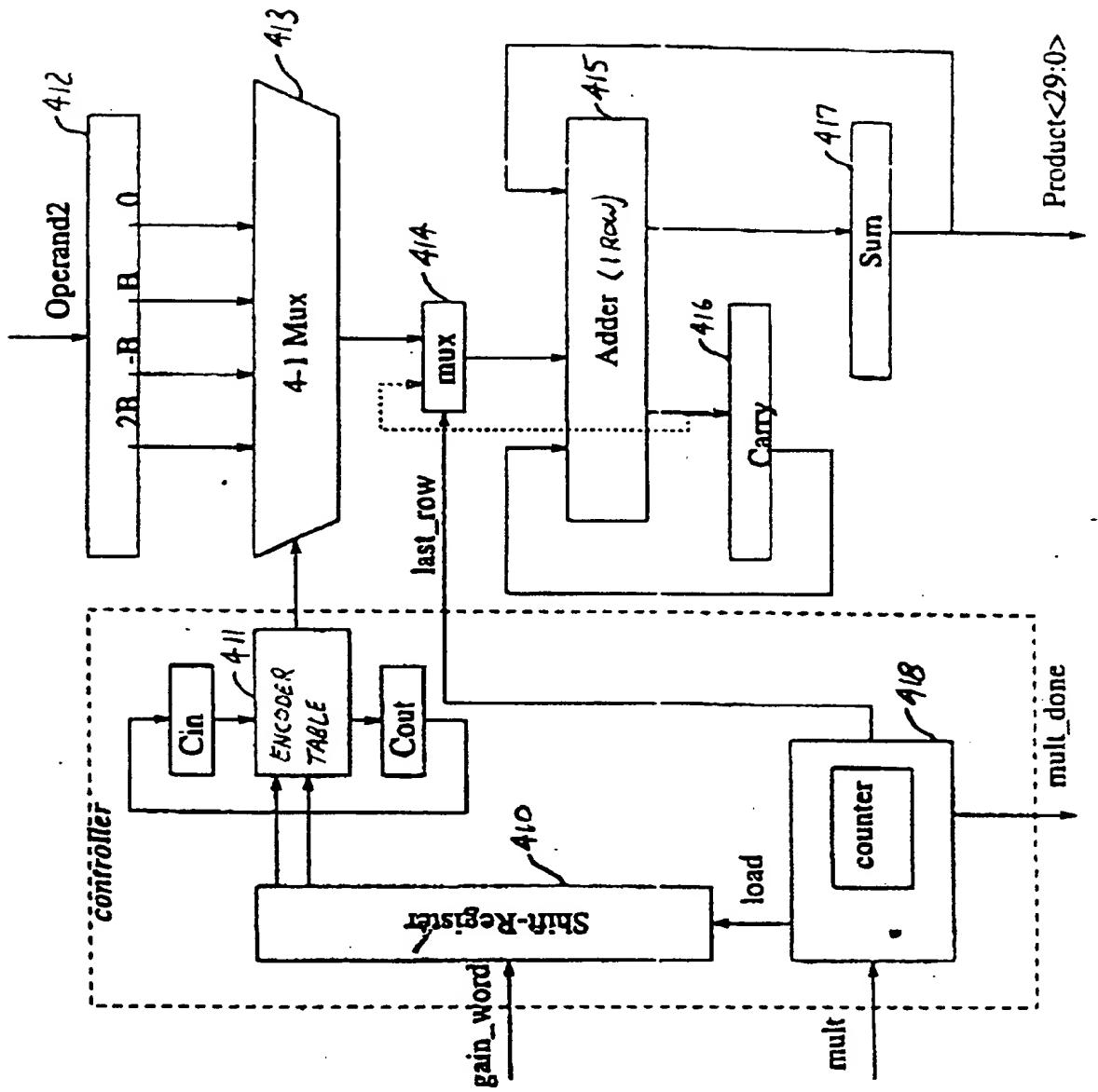


Figure 3.1

## Multiplication

FIGURE 3.2  
(PRIOR ART)

$A_{i+1}$	$A_i$	Operation
0	0	$R_i = R_{i-1}/4$
0	1	$R_i = (R_{i-1} + B)/4$
1	0	$R_i = (R_{i-1} + 2B)/4$
1	1	$R_i = (R_{i-1} + 3B)/4$

FIGURE 3.3  
(PRIOR ART)

$C_{in}$	$A_{i+1}$	$A_i$	Operation	$C_{out}$
0	0	0	$R_i = R_{i-1}/4$	0
0	0	1	$R_i = (R_{i-1} + B)/4$	0
0	1	0	$R_i = (R_{i-1} + 2B)/4$	0
0	1	1	$R_i = (R_{i-1} + 3B)/4$	1
1	0	0	$R_i = (R_{i-1} + B)/4$	0
1	0	1	$R_i = (R_{i-1} + 2B)/4$	0
1	1	0	$R_i = (R_{i-1} + 3B)/4$	0
1	1	1	$R_i = (R_{i-1})/4$	1

## Multiplication

FIGURE 3.4 Example 1

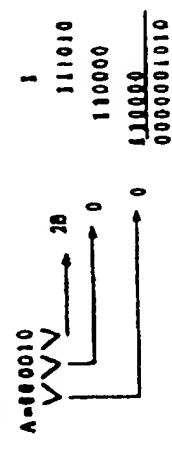


FIGURE 3.5



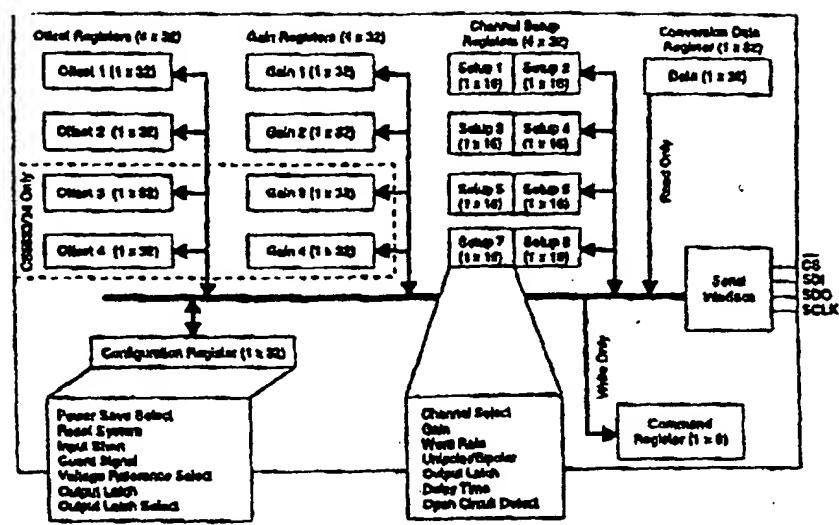


FIGURE 4.1

D7(MSB)	D6	D5	D4	D3	D2	D1	D0
0	ARA	CS1	CS0	R/W	RSB2	RSB1	RSB0
BIT	NAME	VALUE FUNCTION					
D7	Command Bit, C	0 Must be logic 0 for these commands. 1 These commands are invalid if this bit is logic 1.					
D6	Access Registers as Arrays, ARA	0 Ignore this function. 1 Access the respective registers, offset, gain, or channel-setup, as an array of registers. The particular registers accessed are determined by the RS bits. The registers are accessed MSB first with physical channel 0 accessed first followed by physical channel 1 next and so forth.					
D5-D4	Channel Select Bits, CS1-CS0	00 CS1-CS0 provide the address of one of the two (four for CS5533/34) physical input channels. These bits are also used to access the calibration registers associated with the respective physical input channel. Note that these bits are ignored when reading data register. 01 10 11					
D3	Read/Write, R/W	0 Write to selected register. 1 Read from selected register.					
D2-D0	Register Select Bit, RSB3-RSB0	000 Reserved 001 Offset Register 010 Gain Register 011 Configuration Register 100 Conversion Data Register (Read Only) 101 Channel-Setup Registers 110 Reserved 111 Reserved					

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FIGURE 4.2

D7(MSB)	D6	D5	D4	D3	D2	D1	D0
1	MC	CSRP2	CSRP1	CSRP0	CC2	CC1	CC0
<b>BIT NAME VALUE FUNCTION</b>							
D7	Command Bit, C	0	These commands are invalid if this bit is logic 0.				
		1	Must be logic 1 for these commands.				
D6	Multiple Convers- ions, MC	0	Perform fully settled single conversions.				
		1	Perform conversions continuously.				
D5-D3	Channel-Setup Reg- ister Pointer Bits, CSRP	000	These bits are used as pointers to the Channel-Setup registers. Either a single con- version or continuous conversions are performed on the channel setup register pointed to by these bits.				
		...					
		111					
D2-D0	Conversion/Calibra- tion Bits, CC2-CC0	000	Normal Conversion				
		001	Self-Offset Calibration				
		010	Self-Gain Calibration				
		011	Reserved				
		100	Reserved				
		101	System-Offset Calibration				
		110	System-Gain Calibration				
		111	Reserved				

FIGURE 4.3

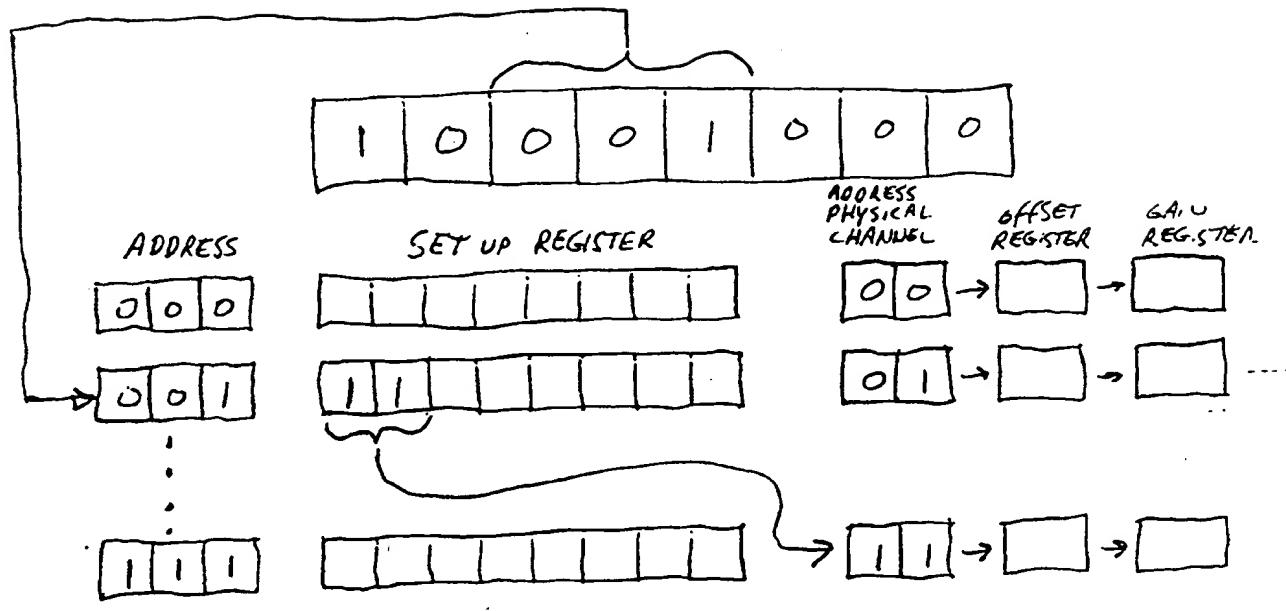


FIGURE 4.4

00000000000000000000000000000000

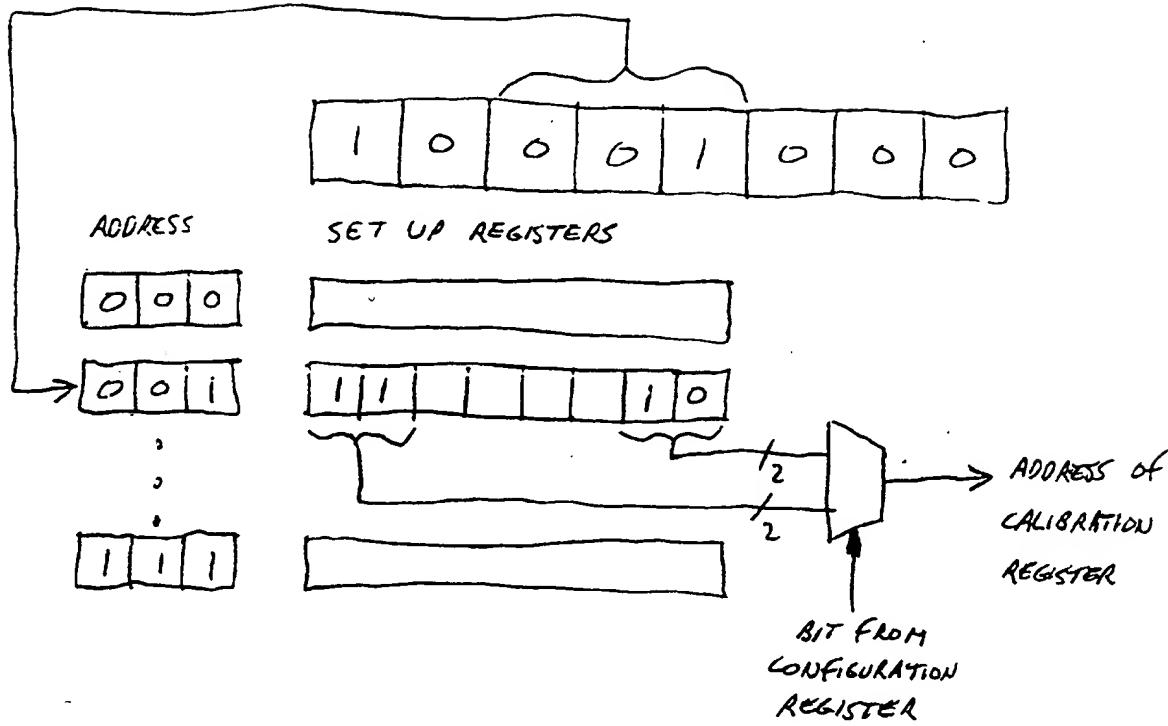


FIGURE 4.5

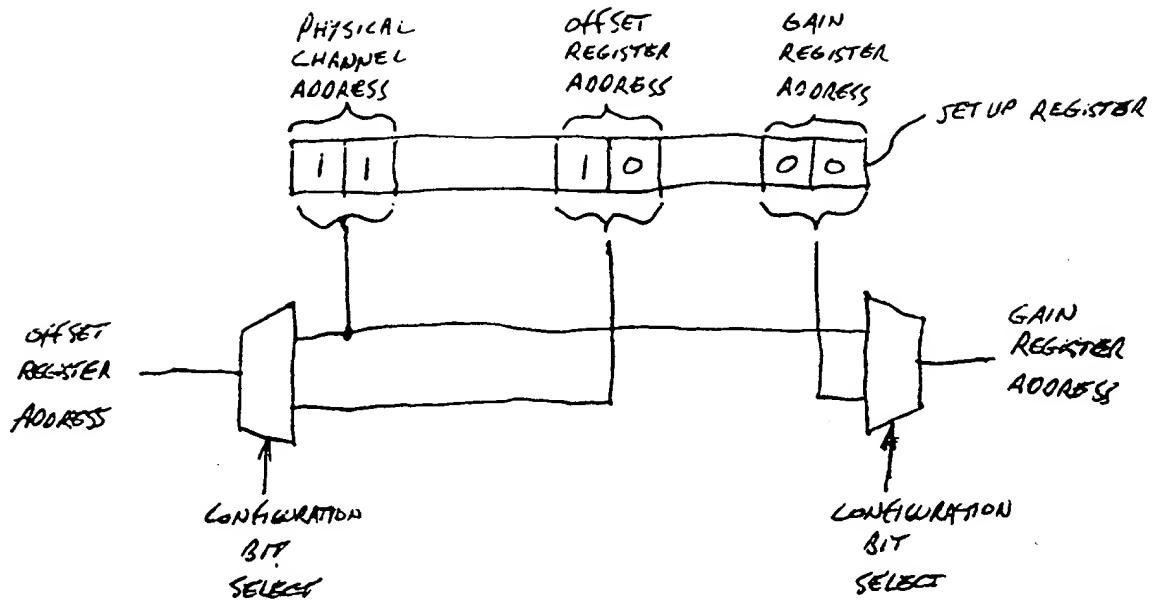


FIGURE 4.6

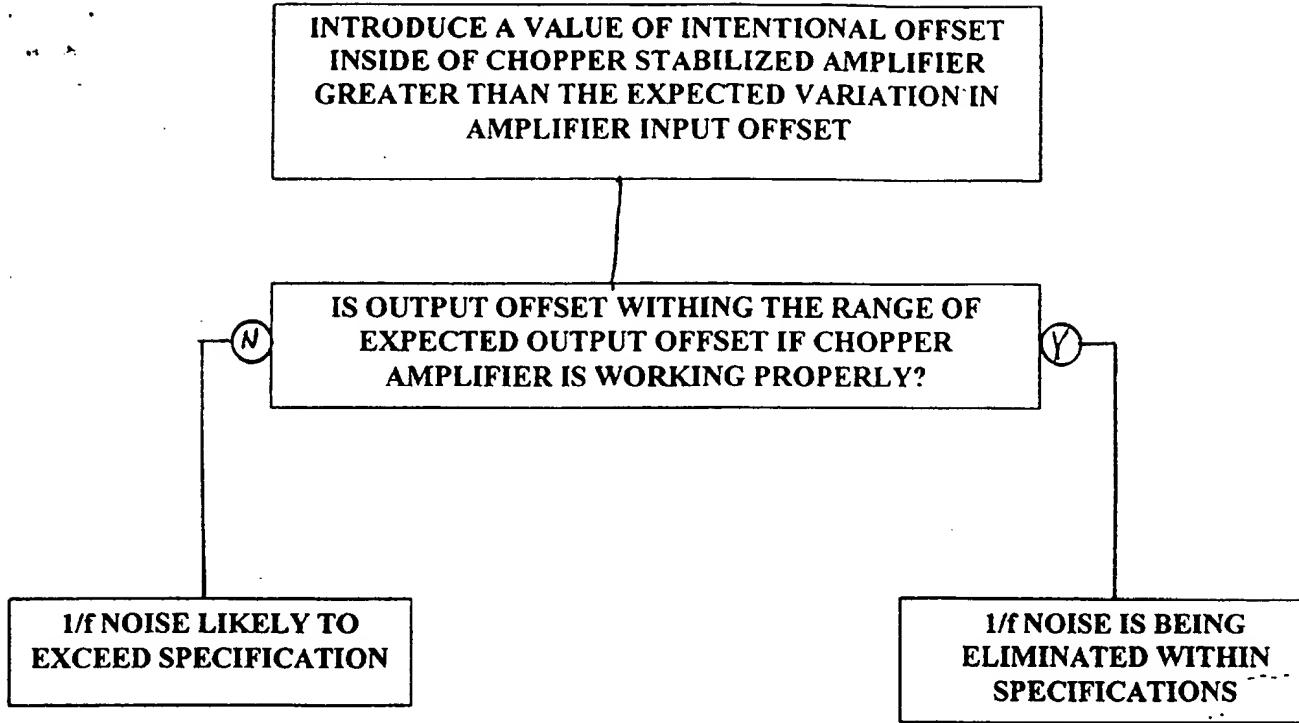


FIGURE 5.1

# Thermocouple Application

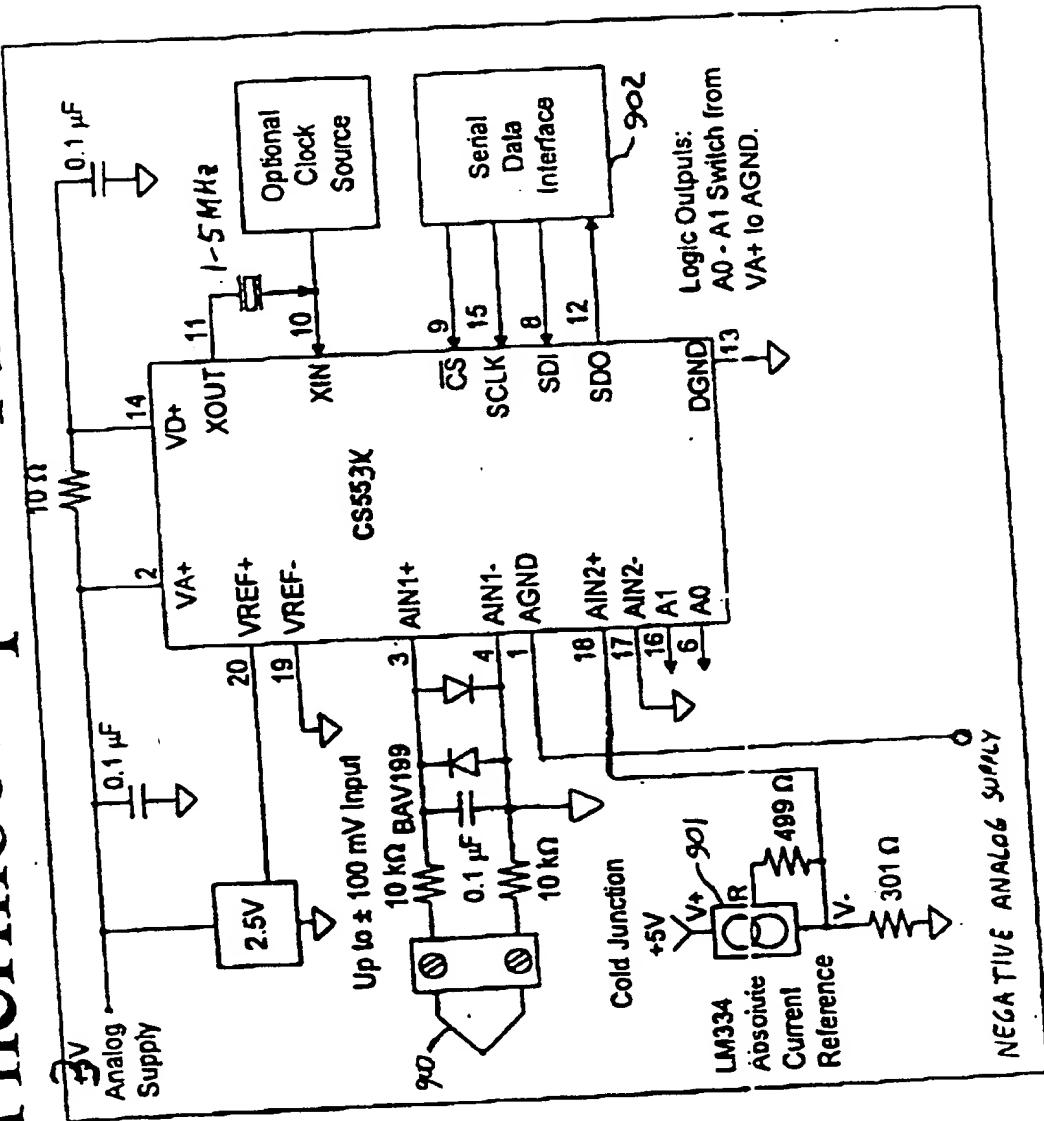


FIGURE 6.1

# Bridge Transducer Application

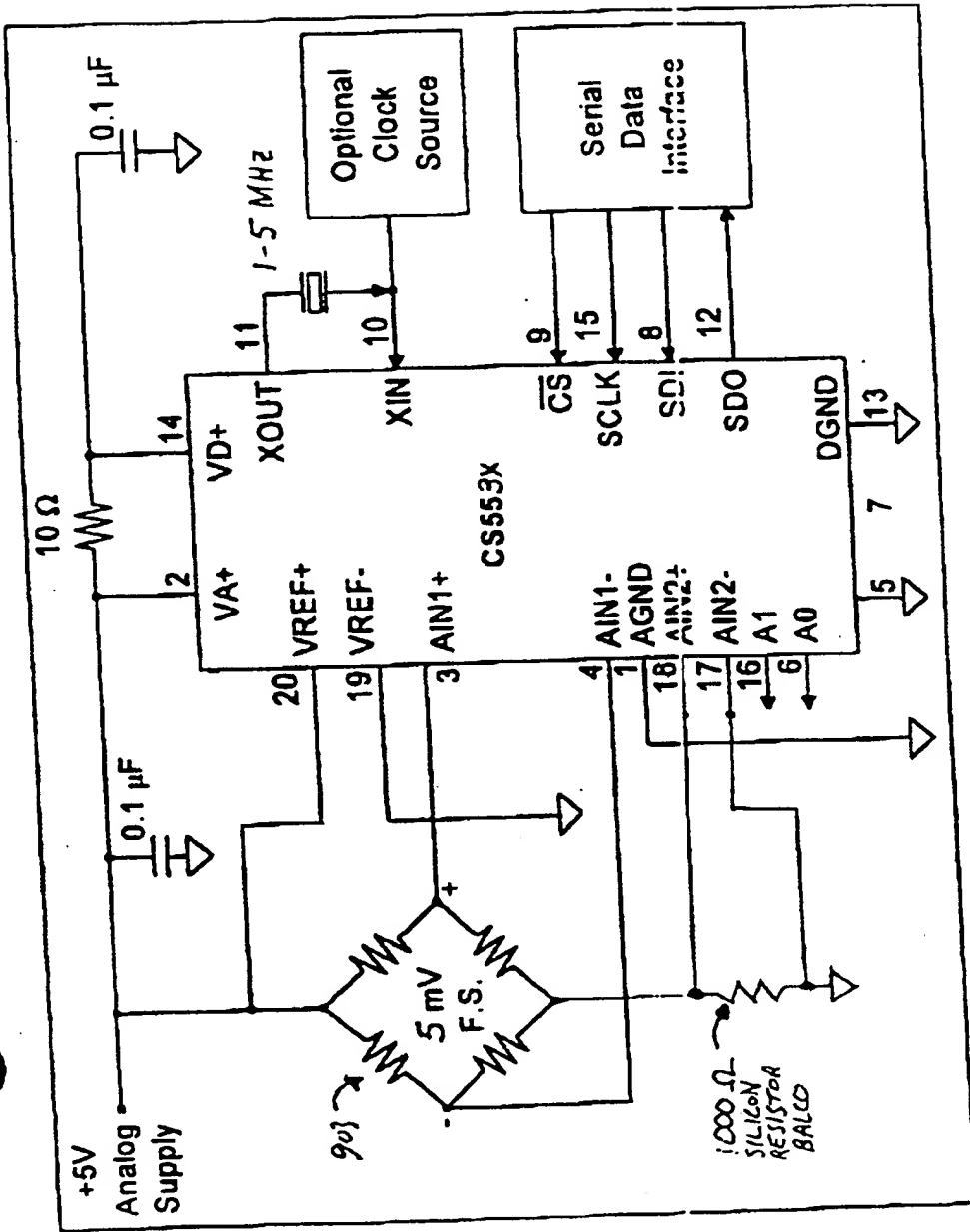


FIGURE 6.2